grow green

earth-wise guide to

Irrigation

do you need an irrigation system?

Although an automatic sprinkler system may seem easier than dragging water hoses around the yard, you should spend some time evaluating your needs and learning about your options.

Consider the following:

Hand watering offers:

- An efficient and cost-effective use of water
- An opportunity to observe any problems in the landscape early on
- For added convenience soaker hoses and sprinklers can be placed on a timer

A well designed and properly managed system can be very convenient but:

- May be expensive to install and maintain
- Typically increases monthly water usage if not properly programmed

for more water conserving tips and rebates visit www.waterwiseaustin.org

Irrigation Evaluation

Austin Water offers free irrigation evaluations for residential and commercial customers. During the evaluation a licensed irrigator will provide an overview of how your system is performing and make recommendations for scheduling changes and equipment upgrades. The evaluation covers:

- Controller settings check
- System components inspection for problems
- Leak identification
- Recommended flow rates and usage for each zone
- Suggestions for improvement

To schedule an audit, call Austin Water at 512-974-2199 or schedule online at: www.cityofaustin.org/watercon/irrigation_audit.cfm

Recommended Residential Irrigation Schedule

(May vary based on seasonal conditions; see www.waterwiseaustin.org for current schedule)

Nov. - Feb.	**System off** (but test for 2 minutes per month)
March - May (spring)	**Once a week**
June - Sept. (summer)	**Twice a week**
October (fall)	**Once a week**

Suggested Run Times

Plant Types	Run Time (spray heads)		Run Time (rotor heads)	
	Spring/Fall	Summer	Spring/Fall	Summer
Turf Grass*	4-6 minutes	8-12 minutes	7-10 minutes	15-20 minutes
Planter Beds	3-5 minutes	6-10 minutes	5-7 minutes	10-15 minutes

*** Generally requires 1" of rain weekly during summer months**

These suggested run times are general guides, and may need to be adjusted for individual landscape conditions.

Device	Best Used For	Pros	Cons
 Drip Irrigation	Planter beds	• High application efficiency (no overspray) • Required in commercial landscapes for areas with less than 6' between impervious surfaces, i.e., between sidewalk and curb • No runoff	• Emitters should be covered with mulch so it is difficult to detect problems • Emitters tend to clog • Only effective when emitters are close to plants root zone
 Bubblers, Flood or Stream	Flat bedding areas and tree wells	• Can be used under shrubs and dense foliage • Good for establishment period of trees (2-3 yrs.) • No overspray	• Do not distribute water very far which requires heads to be spaced near each other • Have the potential to distribute large amounts of water, often causing runoff • Not effective at reaching root zone once trees are established
 Spray Heads	Small irregular turf areas	• Distribute water at a fast rate • Relatively easy to repair • Best for irregularly-shaped areas	• Lowest distribution uniformity • Often need more maintenance • Narrow range of operating pressure
 Rotor Heads	Large turf areas	• Can operate at higher pressure • Low application rate minimizes runoff • Good uniformity of coverage	• Not suited for smaller turf areas • Easily obstructed as plants grow taller
 Multi-stream / Multi-trajectory Rotors	Moderate to large turf areas	• Best uniformity of coverage • Low application rate reduces runoff • Can compensate for high system pressure	• Not suited for small beds

How to Operate Your System

When you have an irrigation system it is important to know how to operate it correctly and make changes when needed. Here are some tips to ensure you're getting the most out of your water use:

- Most water waste is due to extra start times and excessive run times.
- Follow the seasonal watering schedule on the front of this pamphlet
- Know your landscape. All plants have different water needs, which should be considered when programming the controller

Watering Efficiently

- The Texas Commission on Environmental Quality requires all new systems to have a rain shutoff device. If your system does not have one, they are easy and inexpensive to install and the water savings will easily compensate for the initial costs. Rain sensors may be purchased at any irrigation supply store or through a licensed irrigation company
- Properly diagnose your problem – more water is not necessarily the answer. If you have an area of turf or plants that look unhealthy, there's a good chance you may have pests or a disease. Refer to the Grow Green Diagnostics or Lawn Problem fact sheet (www.growgreen.org) before increasing the watering schedule
- Supplement your water needs with rain barrels or a customized rain harvesting system
- Perform a system evaluation periodically

Self Audit Guide

It is important to check that your irrigation system is performing efficiently.

To do so, you will need:

- An audit template (download available at www.waterwiseaustin.org)
- Calculator
- Stopwatch
- Marker flags to mark problem areas (purchase at hardware stores)
- It is best to use the test program feature on the controller. If your controller doesn't have a test program, you can run your sprinklers for 2 minutes on one of the unused programs. **Do not add a start time or set a watering day.** (If you are unclear how to do this, please refer to your controller manual).

Steps for Checking System

1. Log the current controller settings (refer to controller manual for assistance)

- Scheduled days to water
- Start times (it is possible to have multiple)
- Station run times
- Repeat for each program (A,B,C and D) if needed although most landscapes require only the A program

2. Read the Meter

- Each number around the meter face reflects one gallon
- Using a stopwatch, count the number of gallons flowing through in 30 seconds, multiply by 2 to get the number of gallons per minute
- Multiply the gallons per minute by station run time to find total usage for the station

3. Evaluate the station for the following problems:

- Heads that spray onto the sidewalk, driveway, or street
- Heads that are not operating, are buried or have reduced water flow
- Heads that may be broken at their base or gushing out the top
- Heads that are tilted backward or to the side
- Heads that cause a cloud of mist
- Areas that are receiving very little water

Groundcover is a good option to avoid runoff on slopes

Broken spray head

Too much pressure can cause misting

Manual sprinklers should also be placed correctly to avoid overspray

4. Landscape features

- Note what kind of plant material is being watered by this station -- turf grass and exotic plants generally require more water than native and adapted plants
- Ideally plants should be grouped with other plants with the same water needs -- if an existing station consists of varied plant material, water according to the plants with the highest water need
- Plants in full sun usually require more water than those in shade
- Note soil structure – clay soils often require shorter run times to prevent runoff

5. Determine appropriate run times (this is the tricky part)

- As a general rule, it is best to water deeply once per week and no more than twice a week
- Based on the plant material and sun and soil conditions, start with lower run times and wait to see if the plants seem stressed before the next watering. If so, add a few minutes to the run time
- Use the chart on page 1 to determine a good starting point

Repairs to irrigation systems made must be made by the homeowner or an irrigator licensed by the Texas Commission on Environmental Quality

Alternate sources of water

Rainwater Harvesting

The City of Austin encourages the use of rain barrels and rain harvesting systems because they:

- Supplement your irrigation needs and reduce your water usage
- Are quick and inexpensive to install and can be found at many local vendors
- They normally range from 55 to 75 gallons and can be mixed and matched to meet any number of roof types and down spout varieties.

How To Install

The rainbarrel should be placed so that it collects as much rain as possible from your roof. If you have guttering, you can shorten a downspout to end above the barrel, and reattach the end elbow joint to direct the flow. If you do not have gutters, the rainbarrel needs to be placed under a corner where two roof sections meet to create a valley. Position the rainbarrel carefully so that it catches the rain water.

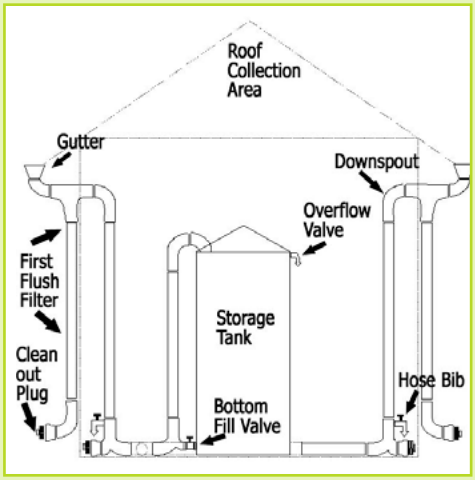
Refer to the table below to determine how many gallons of water you could collect

Total Storm Depth	Roof area (in sqft) draining to rain barrel						
	500	450	400	350	300	250	200
½ inch rain storm	156	140	124	109	93	78	62
1 inch rain storm	312	281	249	218	187	156	125

- Large rain harvesting systems offer increased storage capacity and the benefit of a customized system to meet water requirements. There are many creative ways to incorporate them into the landscape design or can be installed in ground.

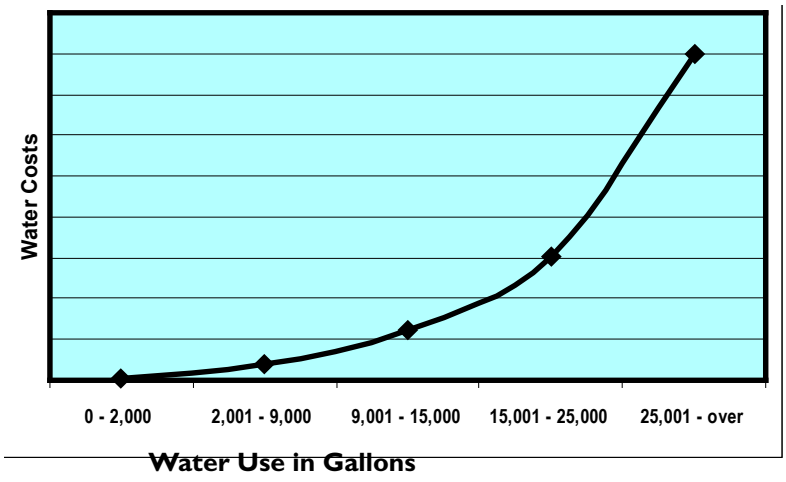
Basic System

There are many ways to harvest rainwater for landscape use. This simple system provides for an additional valve controlled inlet into the bottom of the tank. Most tanks come with a 2" bulkhead outlet. In this illustration, when the valve is open, water will fill the tank from the bottom. If there is a large volume of water, the top inlet will also flow. With the valves open, water will flow out the two hose bibs. When selecting fittings, think of which way the water is flowing. Several shapes may be available and one may be better than the other.



Did you know....?

The more water you use, the more you pay per gallon?



www.growgreen.org

City of Austin WATERSHED PROTECTION 974-2550

AgriLIFE EXTENSION Texas A&M System 854-9600

Austin WATER 974-2199